MAY 23, 1966

INDIA'S WATER SUPPLY

THE PRODUCE TRADE:

MEXICAN STRAWBERRIES

U.S. FROZEN FRUITS AND VEGETABLES

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FOREIGN AGRICULTURE

Including FOREIGN CROPS AND MARKETS

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FOREIGN AGRICULTURE

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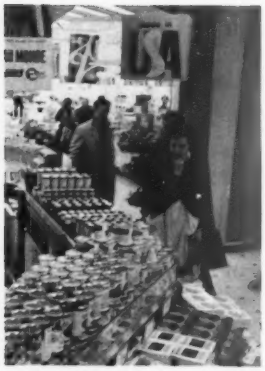

A French housewife tries to choose between the many specialty foods sold last month at the first in-store promotion of U.S. foods by Prisunic, France's biggest chain of self-service stores.

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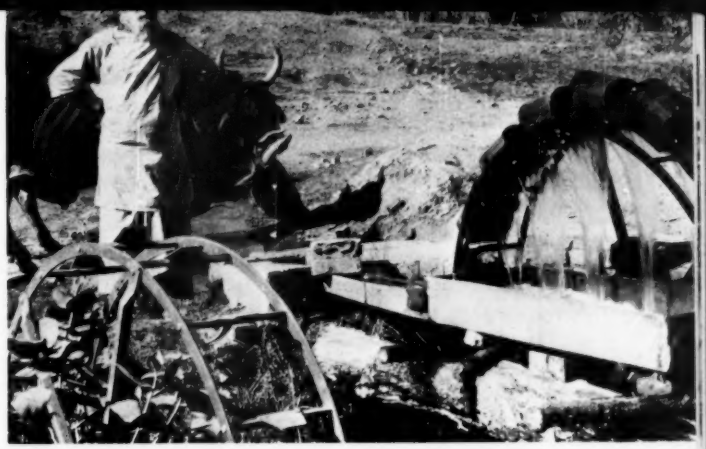


Clockwise: Electricity is used at pumphouse to lift water from river to field; Persian wheel draws it from an open well; river supplies it for household use.

INDIA'S WATER SUPPLY -a vital but limited resource

By ROSS L. PACKARD
Assistant U.S. Agricultural Attaché
New Delhi, India

Availability of water has always been a critical element in India's agricultural development. For thousands of years rainfall has been supplemented by some form of irrigation from rivers and wells. Today, as the country takes on the challenge of feeding a half billion people, the more useful application of water is even more vital.

For long periods each year much of India faces the blazing heat of a subtropical sun. Yet the Indian farmer has learned to live with his arid soil and has found many ingenious ways of applying water to his lands. India's dry barren lands respond well to water, whatever its sources, with a greenness that brings welcome relief to the oftentimes harsh countryside.

Emergency program launched

Water conservation and irrigation figured highly in the Indian Government's Emergency Food Production Drive undertaken shortly after the India-Pakistan ceasefire last September. Special water conservation measures proposed were (1) to introduce additional crops over and above existing ones in a few selected irrigated areas; (2) to prepare and bring under cultivation some land within the areas of new irrigation projects of which the full potential was not being used; and (3) to mobilize electric and diesel pumps for using flow and surface water in lift irrigation.

At high-level meetings on the urgent problem of how to best utilize available water, the Indian Government estimated that up to 3.3 million more acres could be planted to rice, wheat, and other food grains this spring and summer by maximum use of water in double cropping.

In mid-October India's Minister for Irrigation and Power outlined a four-point emergency program, another indication of the developing food crisis. His program called for (1) covering the lag of about 2 million acres between land scheduled for irrigation and that actually irrigated; (2) speeding up completion of irrigation projects; (3) concentrating only on schemes in which some progress had been made; and (4) providing adequate facilities for utilizing water of rivers and wells.

Overall results of the emergency programs initiated last fall to stimulate production of spring crops are still not known, but preliminary reports indicate they have been very successful. Some 3.7 million more acres will be harvested—400,000 above the target. Thus, the emergency program, plus aid from the United States and other countries, has helped head off one of the greatest food crises in recent history.

Rainfall varies widely

Lifegiving water for Indian agriculture comes from many sources. Rainfall is extremely important, as 80 percent of the cropped area is at least partly dependent upon timely and adequate precipitation. While the country averages 50 inches annually, this ranges from 5 in the deserts of the northwest to about 100 in Assam, where the Cherrapunji area may receive as much as 600 inches.

The significance of the Southwest Monsoon in the country's struggle for survival was never more evident than

in the past year when the monsoon failed and farmers without irrigation lost their crops. Originating in the Arabian Sea and reaching India in June, the Southwest Monsoon continues until September. Intensity varies, even in good years, from heavy rains in Bombay and southern India to intermittent showers along the edges of the Indian Desert in the northwestern part of the country.

By late September the monsoons usually retreat after providing about three-fourths of India's annual rainfall. About another 13 percent comes from the scattered rains of the post-monsoon season in October and November. Almost as important as these are the pre-monsoon, March-to-May showers which supply about 10 percent.

The Northeast Monsoon, named after winds blowing from the northeast from December to February, brings important winter rains to Jammu and Kashmir, northern Punjab, Assam, and the coastal areas of West Bengal, Orissa, Andhra Pradesh, and Madras, but adds only about 2 percent to India's total rainfall. After an almost complete failure of winter rains this year, late showers in mid-February have been beneficial to spring crops in the northwest.

Irrigation supplements rainfall

While Indian agriculture thus depends to a great extent upon rainfall, without irrigation vast areas of the country would produce little or nothing.

The British built a number of major irrigation works in India, the first of which was the Ganga Canal in Uttar Pradesh. After Independence, the country moved forward rapidly to construct dams for irrigation purposes, assisted by U.S. AID loans. These projects, known as major and medium irrigation works, were supplemented with a large number of minor irrigation schemes. (Major schemes are those costing more than $10.5 million; medium ones cost between $210,000 and $10.5 million; minor schemes involve construction of new tubewells, the repair of old wells and tanks, and the installation of pumps to draw water from rivers and lakes.)

In India's First 5-Year Plan (1951-52/1955-56) 250 major and medium schemes were initiated. Of these, 196 were carried over to the Second Plan (1956-57/1960-61), which also included 187 new schemes. During the Second Plan period, the total number of schemes completed was 99, leaving 284 to continue into the Third Plan period (1961-62/1965-66).

Progress during the first two 5-Year Plans is shown in the following table:

INDIA'S IRRIGATED ACREAGE

Source	1950-51	1960-61	Increase or decrease
	Million acres	*Million acres*	*Million acres*
Canals	20.5	25.4	+4.9
Lakes	8.9	11.5	+2.6
Wells	14.8	17.4	+2.6
Other	7.3	5.9	—1.4
Total	51.5	60.2	+8.7

The target for irrigated land in the Third Plan, ending this spring, was 12.8 million acres. According to the mid-term appraisal, actual achievements are apt to be 10 million acres, leaving a shortfall of 2.8 million. The Third Plan called for about 100 medium irrigation schemes, storage schemes on the Beas River in Punjab, and irrigation schemes in connection with projects for power development.

Projects slated to continue

Under India's Fourth 5-Year Plan (April 1966 to March 1971), programs to bring water right up to the fields will be continued. The plan will also emphasize lift irrigation facilities, drainage and antiwaterlogging programs, and medium irrigation projects. Of 435 major and medium schemes, both continuing and new, about one-eighth are major ones. For technological reasons it will not be possible to complete all the larger continuing schemes in the Fourth Plan; some will be carried into the Fifth Plan.

The following table shows the estimated percent of acreage, by crop, which will be under irrigation during the last year of the Third Plan and the last of the Fourth Plan.

INDIA: PERCENTAGE OF CROP ACREAGE IRRIGATED[1]

Crop	1965-66	1970-71
	Percent	*Percent*
Total food grains	24.3	28.9
Rice	47.5	56.5
Wheat	37.9	41.5
Other cereal	9.1	9.9
Pulses	10.2	11.1
Peanuts	4.8	7.5
Cotton	19.0	24.5
Sugarcane	76.6	80.0
All crops	22.5	25.5

[1]Based on data in Occasional Paper #11 *A Strategy for the Fourth Plan*, National Council of Applied Economic Research, New Delhi.

The Indian Government's Planning Commission estimates the ultimate irrigation potential of major and medium projects at about 112 million acres (gross) and that of minor projects, including small lakes, tubewells, and open wells, at about 75 million acres (gross). During the Fourth Plan, the country's gross irrigated acreage is expected to increase from 87 million to about 110 million acres—a rise of 23 million acres.

River potential largely untapped

Of India's estimated annual river flow of some 1,356 million acre feet, about 450 million can be applied to both power and irrigation. About 27 percent of the usable flow was being utilized by the end of the Second Plan, and the goal is 36 percent by the end of the Third Plan.

India's rivers are classified into two distinct systems. The Himalayan system consists mainly of the Indus, the Ganga, and the Brahmaputra. Melting snow high in the Himalayas, supplemented by the monsoon rains, makes these rivers a perennial source of irrigation water. While much of the benefit of the Indus-basin rivers goes to Pakistan, the Indus Waters Treaty of 1960 protects the interests of both countries.

The rivers of the Deccan system are mere trickles in beds of stone and sand most of the year, becoming real rivers only during the monsoon period. This system consists of east-flowing rivers like the Krishna, west-flowing rivers like the Sharavati, and those, like the Sone, that flow north and empty into the Gangetic system.

Wells still a major source

Surface water of good quality at shallow depths is normally plentiful in the alluvial plains, where India's many wells are located. Wells provide about 30 percent of the country's irrigation water. A common, colorful scene is the Persian wheel, turned by a pair of bullocks or a lone

camel, with an endless belt of metal buckets—each holding less than a gallon—bringing up water from an open well. This rather inefficient machine dumps the water into a sluiceway where it is channeled to fields.

Other open wells have a variety of ingenious methods of lifting water to the surface, but the more modern ones have electric or diesel engines. Tubewells, a more recent development in India, are all pumped by engines. From about 2,500 tubewells prior to 1951, the number had more than tripled by the spring of 1961, the end of the Second 5-Year Plan. Eventually these more efficient wells will probably replace the open ones.

About one-fifth of the irrigation water comes from artificial lakes—an important part of major and medium irrigation projects—which also store water for creating power. U.S. loans have helped finance several of these projects. Small ponds, or tanks as they are called, are also an important source of water. India's few natural lakes are valued as recreational assets rather than for agricultural use.

The problem of waterlogging and salting of soils has recently been recognized as a possible trouble spot in India's irrigation programs, especially in parts of the Punjab and other areas. It will be necessary to find ways of avoiding losses from waterlogging and salt accumulation as the country's irrigation projects move forward.

Technical Aid and Fertilizer Loom Large in India's Food Program

In India we can find "samples" of all the components that make up the overall world food problem. India's problems are duplicated in greater or smaller degree in many of the less-developed countries.

India already has a population of almost 500 million. Each year over 11 million are added.

Population expansion has canceled the benefits of a 25-percent increase in India's food grain production over the past 10 years. Production per person is lower than in 1954.

Last year, on top of "ordinary" troubles, India had a severe weather problem.

Normally, India is drenched by the monsoon, a seasonal rain, from July to September. Last year, however, rainfall was scanty over most of the country.

Food production fell off, of course. The total 1965-66 food grain harvest in India is estimated by the Indian Government at about 74 million metric tons—14 million less than the 88 million harvested the previous year. India must fill much of this gap by imports if per capita availability of food grains is to be maintained at even 385 pounds in 1966—and that would be below average.

The United States has expanded sharply its grain shipments to India. By the end of calendar year 1966, the United States will have shipped India about 9 million metric tons of wheat and some sorghum grain, as well as some corn, vegetable oils, nonfat dry milk, cotton, and tobacco.

Most gains in food production in India will come the hard way—from increased yields per acre. Fertilizer and widespread application of modern technology are "musts," however, before yields rise substantially.

Fertilizer imports necessary now

India's own fertilizer production capacity is small. Expansion on the scale required probably must depend on private enterprise. The Indian Government, though mindful that prevailing public opinion favors government control of fertilizer production, has nevertheless proposed that private industry be given a role. In the meantime, fertilizer imports are being stepped up.

Last December, President Johnson announced that the United States was lending India $50 million to purchase U.S.-manufactured fertilizer. The American loan will be matched by the Indian Government.

Later, the President proposed that the Agency for International Development increase its effort in the field of agriculture by nearly $500 million. One-third of that total would finance fertilizer exports to India and other developing countries.

The President specified that the remaining funds be used to finance: transfer of American farming techniques; improvement of transportation, marketing, and irrigation facilities; extension services, cooperatives, and credit systems; purchases of American-made farm equipment and pesticides; and research on soils and seeds.

U.S. technical aid stepped up

In the past 10 years over 1,350 technicians from India have taken special agricultural training in this country. American technicians also have carried their skills to India. Present plans call for more than doubling of U.S. technicians now in India.

Part of their effort will be aimed directly at increasing yields and improving distribution. For example, one U.S. team last winter surveyed possibilities of making better use of India's soil and water resources. Another group of specialists analyzed India's grain unloading and handling facilities at seaports. Current grain shipping is based in part on findings of this team.

The Indian Government is also establishing, with the help of U.S. specialists, a price support program as one phase of an overall production incentive effort. The government has already set up a Food Corporation modeled along the lines of our Commodity Credit Corporation.

The Indian-American Foundation recently proposed by President Johnson will promote progress in science, technology, and other fields of learning. The Foundation will be set up with $300 million worth of Indian rupees generated from P.L. 480 sales of U.S. farm products.

The Indian Government is budgeting about $11 million annually for family planning programs and the amount will be increased markedly. Some 18,000 family planning clinics have been established and training centers have been set up to furnish people to staff additional clinics. But the task ahead is huge.

All of India's problems are huge. And time is of the essence. As one weekly journal said recently, "Once India had centuries to solve its food problems, then decades. Now it's a matter of years, or months."

Excerpts from a recent speech by Raymond A. Ioanes, administrator, Foreign Agricultural Service, at an agricultural development conference at the University of Florida.

Examining the outlook for

Our Foreign Sales of Frozen Fruits and Vegetables

By A. CLINTON COOK
Fruit and Vegetable Division
Foreign Agricultural Service

This may be the year when the U.S. frozen food industry will decide whether to try expansion into overseas markets. So far, our foreign trade in frozen foods has been overshadowed by the booming domestic market: exports of frozen fruits amount to only about 2 percent of our pack, which is close to 650 million pounds; exports of frozen vegetables, to less than 1 percent of our 3,000-million-pound pack.

For our imports, it is the same story. Frozen vegetable imports are practically nonexistent, and frozen fruit imports only 1 percent of the pack—except for strawberries, from Mexico, which supply nearly a third of our consumption and may exceed 70 million pounds this year.

For several years, we in FAS have been watching developments in frozen foods around the world in an effort to gain some ideas on U.S. export potentials. With this background, plus special surveys in the United Kingdom and Sweden, the time seems ripe for presenting the pros and cons of export expansion, although the decision to expand is naturally a matter for industry itself.

Where the best foreign opportunities lie

Based on current information, I would rate overseas market potentials in this order: Northern Europe, Japan, and Hong Kong.

Both the processing and the distribution of frozen foods in Northern Europe have shown much progress in recent years. Frozen fruit offers us less opportunity in Europe than vegetables do, since we are not competitive in price.

Europe's frozen vegetable pack is around 400-500 million pounds, or just under 20 percent of the U.S. pack. Some 70 to 90 percent of it is composed of peas, spinach, and brussels sprouts, with peas alone accounting for about 70 percent. In the United States, on the other hand (if potato products are eliminated), peas account for only 22 percent. It would be safe to assume that the European market is fairly well saturated with these three main vegetables, and that our only opportunities would be short-supply periods resulting from unfavorable weather.

Some circumstances are promising

Europe's per capita consumption of frozen foods is extremely low in relation to ours; thus, its growth potential is great. The Swedes, with the highest consumption, eat only 12 pounds per year; the British are next with 8, and so on down to the French with only 1.

Europe is building up its facilities for handling frozen foods. Trade sources in the United Kingdom forecast that 52 percent of British homes will have refrigerators by 1967, as against only 14 percent in 1959. Similar trends are doubtless underway in other countries.

Self-service stores—many of which have frozen food cabinets—have been rapidly increasing their share of Europe's retail food sales. In Sweden, they handle two-thirds of the retail food business; in Norway, Switzerland, West Germany, the Netherlands, and the United Kingdom, from 40 to 60 percent.

There is an acute shortage of labor in most West European countries, and many married women work outside the home—in Sweden, half the married women. These homemakers need and desire convenience foods. Their opinions, coupled with the possibilities offered by the current low per capita consumption, should step up frozen food sales in the years ahead.

Some circumstances are discouraging

Least developed of Europe's market outlets for frozen foods are the catering and institutional uses. This is partly a matter of small plant size and old-fashioned equipment. For example, last winter, when we ran short of No. 10 cans of water-pack cherries, our bakery customers in Belgium and West Germany were not equipped to switch to frozen cherries.

Distribution presents a problem for frozen food sales in Europe. The frozen food industry there is dominated by two large international companies; in several of the more important markets, one or the other has a large share, often controlling the frozen food cabinets. These companies also have developed the delivery system—a big item in the cost picture, since lack of storage space in most stores means that frequent deliveries are needed.

There are smaller companies in distribution, however. Most distributors buy sizable quantities of frozen foods, either in bulk or packed with their label.

Some specialty foods have labeling and additive problems; and some additives in themselves constitute highly effective trade barriers. Other barriers exist too. Duties are quite high except in the United Kingdom, where all frozen vegetables enter at 10 percent ad valorem. The Common Market duty is 19 percent, Sweden's 1.7 to 3.5 cents a pound, and Norway's 3 to 5 cents a pound.

Trade centers offer opportunities

Coming up for decisions soon by the U.S. industry are trade shows in three important overseas market areas.

The Trade Fairs Division of FAS has scheduled a Trade Center show in Tokyo in mid-August and a food show at the Hilton Hotel in Hong Kong in later August and early September. In February 1967, the Trade Center in London will be available for a frozen food show.

While we are not recommending an all-out effort to sell frozen foods overseas, we do believe that these three shows warrant careful consideration.

The Trade Center in Tokyo has been effective in introducing products that are new to the Japanese market. Attendance at the 1965 show was over 7,000, including importers, wholesalers, retailers, and food manufacturers. Press and TV coverage was good. The result, as described by a Japanese agent for a U.S. firm, was that "Interest shown by trade visitors in frozen food was beyond expectations, and we believe that there is a bright future for this type of merchandise."

Author (center), Assistant U.S. Agricultural Attaché Robert S. FitzSimmonds, and strawberry exporter José Martinez inspect frost-damaged berries in Mexico.

Mexican Strawberry Output and Exports Still Soaring

By A. CLINTON COOK
Fruit and Vegetable Division, FAS

Mexican strawberry producers, encouraged by expanded export opportunities in the United States, increased plantings some 40 percent this season and are winding up the harvest of their ninth record crop for as many years.

Though frost and hail damage reduced yields below their usual high level, the 1965-66 production of strawberries is expected to hit 110,000 million pounds—26 million above the 1964-65 record and double the 1961-62 level. As in the past, about 80 percent of the crop is being frozen and 20 percent sold fresh.

Producing these record crops are Mexican farmers in the States of Guanajuato and Michoacán. These farmers grow their berries at altitudes of 5,000 feet or above and on plots that are usually no larger than 10 acres. Planting takes place in April-November; harvesting, in November-June.

Though production practices vary widely, most growers are now keeping plants for only 1 year, whereas in the past about a third were left for a second year, and many producers have achieved high yields of 10,000-12,000 pounds per acre. Varieties are mainly Solano, Florida-90, and Fresno in the State of Guanajuato and Klondyke in Michoacán.

Helping in the financing of these crops are the big freezing firms that export to the United States. So fast has been the growth in these firms—from 12 to 17 between 1964 and 1966 alone—that they are competing with one

ACREAGE, PRODUCTION, AND YIELDS OF MEXICAN STRAWBERRIES

Year	Acreage	Production	Yields
	Acres	*Short tons*	*Tons per acre*
1960-61	4,400	22,100	5.0
1961-62	4,900	25,400	5.2
1962-63	5,100	28,100	5.5
1963-64	5,300	30,500	5.8
1964-65	7,000	42,000	6.0
1965-66[1]	11,000	55,000	5.0

[1]Estimated.

Note: The acreage estimates have been revised downward, and the yields upward. Adverse weather caused a reduction in 1965-66 yields in the Irapuato area. If growers discontinue planting Klondykes, output per acre will be somewhat higher.

U.S. IMPORTS OF FRESH STRAWBERRIES FROM MEXICO

Month	Marketing season[1]					
	1960	1961	1962	1963	1964	1965
	1,000 lb.	*1,000 lb.*	*1,000 lb.*	*1,000 lb.*	*1,000 lb.*	*1,000 lb.*
November	—	13	41	394	464	746
December	23	201	103	708	931	1,256
January	26	187	576	210	722	1,945
February	10	150	702	538	729	1,849
March	305	329	319	1,357	1,273	2,288
April	19	72	595	354	921	—
May	4	14	113	233	111	—
Total	387	966	2,449	3,794	5,151	—

[1]The Mexican season for fresh marketing begins in November of the year shown and ends in May of the following year.

U.S. IMPORTS OF FROZEN STRAWBERRIES FROM MEXICO

Month	Average 1959-61	1962	1963	1964	1965	1966
	Mil. lb.	*Mil. lb.*	*Mil. lb.*	*Mil. lb.*	*Mil. lb.*	*Mil. lb.*
January	0.3	0.3	0.7	0.7	1.5	2.2
February	1.2	1.0	2.7	1.8	4.5	6.2
March	3.4	6.5	7.3	13.0	9.3	12.7
April	6.5	8.7	8.1	9.6	13.0	—
May	5.7	5.3	7.0	5.6	7.0	—
June	2.9	6.0	3.4	4.2	5.9	—
July	1.4	1.4	2.3	2.8	3.1	—
August	.4	1.3	1.0	.8	1.9	—
September	.4	.6	.6	.6	.6	—
October	.4	.6	.5	.1	.9	—
November	.1	.4	.4	.2	1.9	—
December	.3	.2	.6	.3	2.2	—
Total	23.0	32.3	34.6	39.7	51.8	—

Three views of a modern Mexican freezer. Top to bottom: Plant office; pushbutton panel for controlling temperature; processing room with sorting tables in foreground, mixing machines at rear, conveyors overhead for moving field boxes to workers and empties to unloading dock.

another, as well as with other crops, for the land. Today, they finance practically all the cash cost of strawberry production—lending enough money for the plants, fertilizer, and spray and specifying varieties to be planted, fertilization to be used, and cultural practices to be followed. They also furnish fieldmen who act as extension workers. Normally these loans, plus services, are available at 12-percent interest rates, but this season competition was so keen that some processors furnished interest-free advances to attract larger acreages.

Such firms, together having a capacity of over 100 million pounds, are in most cases very up-to-date. They all have deep wells for their own water supply and laboratories for checking mold count and other quality factors; most are regularly inspected during the processing season by representatives of U.S. buyers. They grade berries according to USDA standards, with the majority of the berries grading USDA Grade B.

Though a profitable crop relative to other local farm products, Mexican strawberries are only about half as costly as U.S. berries for processing. This lower price, plus the $1.56-a-day average wage of packing-plant workers and the government-controlled price for sugar of only 5.6 cents a pound, gives Mexican freezing firms a strong competitive edge over U.S. freezers.

If Mexican strawberry exports this season follow their usual course, over half the crop will move to the United States and a small share will go on to Canada. Most of the U.S. import will be in the form of frozen berries, purchases of which are estimated at 70 million pounds for calendar 1966. This is 40 percent above the 1965 level and triple the 1959-61 average.

Fresh exports, too, are on the rise, as a result of improvements in transportation facilities. In the first 5 months of the current marketing season for fresh berries (which runs from November through May), shipments of this type to the United States reached about 8.1 million pounds, or 50 percent above those for all the 1964-65 season and over eight times the level of 1961-62.

Along with the rise in export trade has developed an expanded domestic market for strawberries. Today accounting for about half of Mexico's fresh strawberry sales, this market in the future is expected to grow faster than the exports. Frozen strawberries are also being used increasingly at home as preserves.

USSR Expected To Fall Short of Tea Goal

The Soviet Union—generally the world's sixth largest consumer of tea—has set tea self-sufficiency as one of its long-range agricultural goals. However, most recent data show that the country is not actually planning any great surge in production before the turn of the decade.

A rather substantial importer of tea from India and Ceylon, the Soviet Union between 1961 and 1964 increased its imports by more than 100 percent to 32,500 metric tons. Largest share of the gain came between 1963 and 1964 and was accounted for by expanded consumption.

The Soviet Union is also a minor tea exporter, shipping about 8,000 to 10,000 tons to Mongolia and several of the East European nations.

To eliminate the imports and still keep on exporting, the Soviet Union would have to procure at least 100,000 tons more tea leaves than the announced procurement for 1966 of 206,000. And this estimate is based on current demand levels. (Generally manufactured tea production equals about 25 percent leaf output; however, because of statistical differences, Soviet production of manufactured tea is around 38 percent of reported procurements.)

According to one Soviet official, if domestic demand for tea continues to rise as rapidly as it has in recent years, a leaf production increase of around 150,000 tons will be necessary in the Republic of Georgia alone. Georgia—which produces 95 percent of the crop—would have to expand tea area nearly 50 percent to obtain such a tonnage.

However, according to the new 5-year plan, the Republic of Georgia will add only about 13 percent more land to production for a crop of around 235,000 metric tons of tea leaves by 1970. This is 60,000 tons short of even the more conservative estimate of procurement needs from Georgia for self-sufficiency.

I. S. Joseph Company Awarded Presidential "E" For Widening Market for U.S. Feed Ingredients

One of the highlights of last week's Upper Midwest Conference on Agricultural Export Trade was the presentation of a Presidential "E" Award to the I. S. Joseph Company, Inc., of Minneapolis, Minn., for its leadership in substantially widening the foreign market for U.S. feed ingredients.

Secretary of Agriculture Orville L. Freeman awarded the "E" citation to Burton M. Joseph, president, whose 54-year-old company is one of the country's largest dealers in specialty feed ingredients used in the manufacture of cattle, swine, and poultry feeds. Besides sugarbeet pulp and wheat flour mill feeds, these include corn feeds, oilseed meals, and alfalfa hay.

Develops pelleting process

I. S. Joseph's successful export program resulted from the development of a special process to compress feed ingredients into pellets. Prior to this innovation, the bulkiness of bagging and shipping lightweight feeds in a natural state made costs prohibitive.

The idea of pelleting feed ingredients originated in the summer of 1962 when the company's first large shipment of beet pulp to Europe presented so many problems, no shipper would contract to handle another. Hundreds of bags were tearing as they were loaded on board ship. When loading was completed, 2,000 tons of bulky pulp filled the holds of a vessel that would normally carry 9,000 tons of bulk grain. Yet Western Europe, because of drought, was in particular need of feed at the time.

U.S. producers could cash in on this market, I. S. Joseph officials decided, if feed ingredients could be compressed so that size corresponded more closely to weight. Following unsuccessful attempts with hay-wafering machines, the firm turned to the California Pellet Mill, largest U.S. manufacturer of pelleting equipment.

Existing pelleting machinery had to be modified to accommodate feed materials, each of which presented different problems. Processing methods had to be devised to preserve the basic characteristics of the materials, both for nutritional value and to avoid reclassification for duty purposes. The result: bullet-sized pellets that could be shipped in bulk like grain, and sold at competitive prices.

Once the equipment was perfected, grain and sugar companies had to be persuaded to install it for byproduct processing. This they were willing to do when they recognized the new export possibilities pelleting opened up. In some cases, for reasons of economy, the machinery was located at ports where products from several plants could be pelleted and shipped out.

Work on the process was carried out rapidly, and I. S. Joseph's first shipment of pelleted sugarbeet pulp left for Rotterdam in the fall of 1962. By 1965, the company's exports of all categories of pelleted feed ingredients totaled 250,000 tons and represented about half of its total sales.

EEC biggest buyer

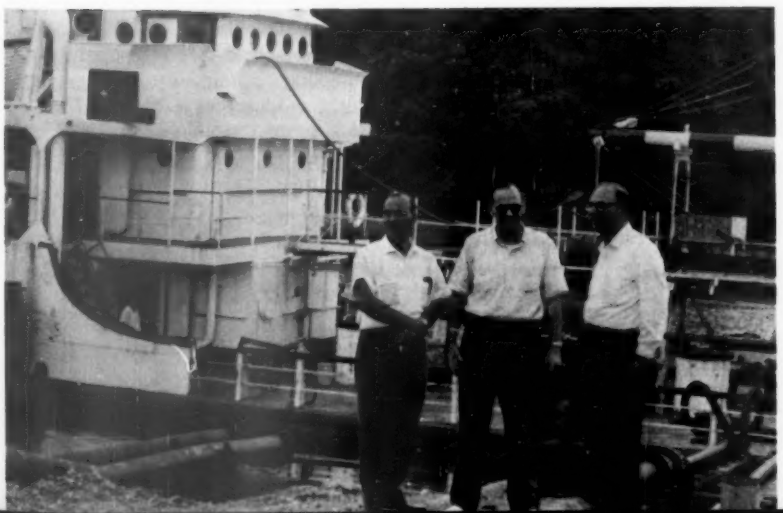
Although I. S. Joseph ships to markets on four continents, biggest buyers are the European Economic Community countries, where rising living standards and populations have led to a rapid increase in meat production. Feedstuff requirements are far in excess of what the area itself can supply, and the resultant demand for U.S. feed ingredients has had a strong impact on the Midwest farm economy.

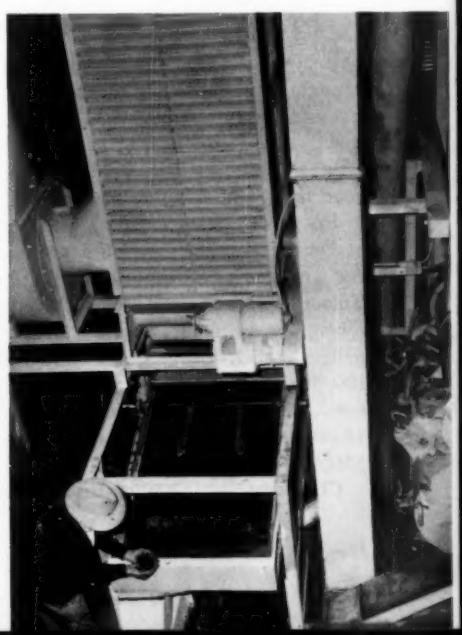
For Midwestern flour mills, improved access to the growing European market means higher prices for feed ingredients like middlings, a byproduct of the milling process. For soybean growers, exports have prevented a surplus, keeping prices above government support levels. And for the Red River Valley sugarbeet industry, new outlets for pulp mean more returns to growers and processors.

I. S. Joseph exported 75,000 tons of sugarbeet pulp or about 90 percent of total U.S. export volume last year. According to the company's president, the rapid rise in the U.S. sugarbeet crop following the cutoff in sugar imports from Cuba could have ruined the American sugarbeet pulp market if exports had not increased. New markets for pulp eliminated the need for government support, he added.

Besides opening up new export markets and stabilizing domestic market prices, the adaptation of pelleting ma-

Below, Burton M. Joseph (center) supervises unloading at company facilities in the Dominican Republic for handling tallow, caustic soda, and similar liquids; right, pelleting installation compresses dehydrated alfalfa.





First Containerized U.S. Poultry Shipment Arrives in West Germany in Top Condition

An experimental shipment of frozen U.S. chickens and turkeys—the first poultry to be exported in a van container—arrived in Hamburg, Germany, May 6, in excellent condition. German importers and government officials on hand for the unloading confirmed the poultry's quality after the 13-day voyage from the United States.

Marketing specialists in the Institute of American Poultry Industries (IAPI) set up the test shipment with the cooperation of USDA's Agricultural Research Service. IAPI administers market development programs in Germany for the U.S. poultry industry's International Trade Development Board.

Through every step of the shipment, specialists studied the costs and potential savings of container transit for poultry. Their results show that containerization protected the poultry better than conventional shipping did and cut costs in packaging and handling. In addition, pilferage, time, labor, spoilage, and other important cost factors were greatly reduced.

Parts, broilers, and turkeys

The experimental cargo, supplied by a major poultry producer in Virginia for German importer F. Röver and Son, consisted of 32,000 pounds of chicken backs and necks, 1,000 pounds of cutup chicken parts, 500 pounds of whole broilers, and 1,000 pounds of whole turkeys.

Packaging and strapping materials in several strengths and sizes were tested for durability and held up well. Two kinds of shrinkable polyethylene bags were used—and three strengths of shipping boxes holding six turkeys each. Two strengths of boxes held 12 chickens each and a third held 24 chickens.

Strapping, which in conventional cargo reduces pilferage and gives structural support to the boxes, was used on only some of the boxes in the container. Both plastic and metal straps were tested. Because the poultry was so well protected in container shipping from rough handling en route, cheaper, lighter packing boxes held together as well as the sturdier ones needed to ship poultry by conventional means.

From U.S. dealer to ship

The poultry was loaded into a 35-foot van container with a wheeled chassis at Broadway, Virginia, and hauled to Sea-Land Service's marine container terminal at Port Elizabeth, N.J. The container was removed from the chassis, loaded aboard the *S.S. Fairland*, and stacked alongside other containers.

A self-powered refrigeration unit in the container, which kept the poultry frozen while being hauled over land, was hooked up to the ship's electrical system for convenience and economy during the 13-day voyage.

After a short stop in Rotterdam, the ship docked at Bremen—the only German port now equipped to handle containerized cargo—where the container was lifted off the ship, mounted on a wheeled chassis, and hauled about 50 miles overland to the Röver customer warehouse in Hamburg.

Top, container—with refrigeration unit at front—is put on wheeled chassis in Bremen. Above, loading poultry into container in Virginia.

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chinery for feed ingredients has brought new business to equipment manufacturers, created new jobs for machinery operators, and brought additional traffic to trucking firms, railroad lines, and shipping companies.

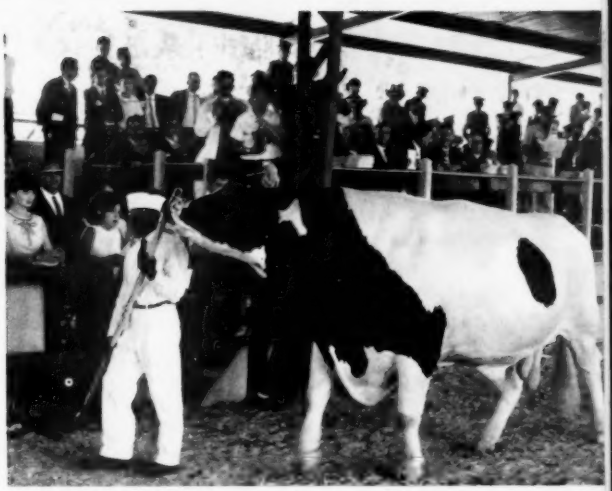
Joseph's shipments move from ports at Duluth/Superior—which accounted for a quarter of its exports last year—Toledo, Chicago, and New Orleans. Since this company began exporting pelleted feed, others have followed suit, boosting exports of feed ingredients from Duluth/Superior from 18,000 tons in 1959 to 225,000 in 1965.

Chief destination among EEC ocean ports for I. S. Joseph's shipments is Rotterdam, from which the pellets are transshipped throughout Western Europe. Cost of handling bulk pellets via ocean freight to Rotterdam is less than that of shipping from a factory in the United States to a domestic consumer 600-700 miles away.

Market surveyed first

Joseph's export expansion was preceded by a series of conferences with key trade representatives in six European countries to determine the market potential for the products it handles. A sales organization was then developed throughout Western Europe, with agents in France, Belgium, Luxembourg, the Netherlands, and West Germany coordinated by the company's general agent in Rotterdam.

I. S. Joseph has also applied bulk handling techniques to shipments of such products as tallow and caustic soda to the Caribbean area. These had hitherto been shipped to the Dominican Republic and Guatemala solid-packed in drums. By establishing facilities in the two countries to handle bulk liquids, the company has introduced economies in freight, handling, and basic product cost—economies passed on to buyers and resulting in larger markets for U.S. producers.



Left, various breeds are paraded around the show ring; above, a Grand Champion Holstein-Friesian bull purchased in the United States when 8 months old.

U.S.-Bred Grand Champions Shown at Central American Exposition

By DALTON L. WILSON
U.S. Agricultural Attaché, Guatemala City

Some 275 head of purebred beef and dairy cattle and 76 head of horses were exhibited at the Fifth Central American Livestock Exposition held in Guatemala City, Guatemala, April 17-24. Three U.S. livestock specialists attended and judged the beef and dairy cattle.

Representatives of the U.S. livestock industry described the show as successful and said that the animals, which came from three Central American countries and Panama, were well fitted for the show. Several of the Grand Champions of the show were animals—Brahman, Holstein-Friesian and Santa Gertrudis—which had been imported from the United States.

The show was well attended by representatives of other Central American countries and Panama. Some 60 leading U.S. cattlemen attended the show. These included Commissioner of Agriculture for Florida Doyle Conner and a group of 27 cattlemen from Florida; the presidents of the Santa Gertrudis Breeders International and the Texas Brahman Breeders Association; and representatives of such U.S. breeding organizations as the American Brahman Breeders Association and the American Angus Association.

Brahman, Santa Gertrudis, and Black Angus predominated among beef breeds exhibited. Red Angus, Charolais, and Indu Brazil were also shown. Representing dairy breeds were Holstein-Friesian, Brown Swiss, Guernsey and Jersey (in that order), as well as some Ayrshire.

Providing U.S. judges and classifiers under Livestock Market Development Projects has been effective in stimulating interest in and demand for U.S. purebred breeding cattle in Central America. These activities have also provided a medium for U.S. livestock breeders and exporters to become better acquainted with Central American livestock breeders and to learn of their specific requirements.

For example, the value of purebred cattle imported by Guatemala from 1961 to 1964 increased by some 300 percent. During this period the U.S. share of the Guatemalan market increased from 84 to 96 percent. During the first 6 months of 1965, purebred cattle imported by Guatemala exceeded the corresponding period of 1964 by 17 percent and over 99 percent of total imports were obtained from the United States. U.S. export figures for all of 1965 show shipments of 93 head of dairy cattle, 538 head of beef.

Imports of purebred cattle and the U.S. share of the market have also increased sharply in Honduras.

Imports from the United States went from $3,600 in 1961 to a high of nearly $330,000 in 1963, then dropped to around $221,000 in 1964. During the fourth quarter of 1965, however, Honduras imported what is probably an alltime high of some 566 head of purebred beef and dairy cattle with a c.i.f. value of nearly $400,000. All of these animals were obtained from the United States. U.S. export figures for the entire year show 256 head of dairy cattle and 441 head of beef cattle.

GUATEMALA'S IMPORTS OF PUREBRED CATTLE

Year	Total imports, c.i.f. value	Imports from U.S. C.i.f. value	Imports from U.S. Share of total
	U.S. dol.	*U.S. dol.*	*Percent*
1961	110,569	92,471	84
1962	105,929	95,579	90
1963	81,165	46,201	57
1964	387,672	370,912	96
Jan.-June:			
1964	213,324	200,614	94
1965	237,672	236,310	99

HONDURAS' IMPORTS OF PUREBRED CATTLE

	Total imports, c.i.f. value	Imports from U.S. C.i.f. value	Imports from U.S. Share of total
	U.S. dol.	*U.S. dol.*	*Percent*
1961	3,600	3,600	100
1962	100,088	72,037	72
1963	338,671	329,989	97
1964	229,912	220,763	96
1965[1]	400,000	400,000	100

[1]Estimated.
Dirección General de Estadística y Censos.

ROKA Sales Good Says Trade

On-the-spot sales of U.S. foods of some $600,000—with a potential of $2.5 million—elicited a verdict of "successful" from the U.S. participants in the 5-day ROKA '66 International Food Fair at Utrecht.

An informal survey of the 57 U.S. cooperators and exhibitors on hand showed a preference for the "trade only" approach tried here for the first time at a trade fair.

Among the U.S. commodities promoted were jet-fresh fruits and vegetables, rice, raisins, cranberries, Florida citrus juice, and frozen poultry.

Clockwise from top left: fresh fruits and vegetables arrive at exhibit after jet flight; U.S. Ambassador William Tyler carves turkey; Dutch girls enjoy U.S. raisins straight from the box; and noted Dutch cooking authority examines iceberg lettuce at U.S. exhibit.

U.S. Poultry and Tallow-Based Soap Promoted at Milan Fair

At the U.S. exhibit at the recent Milan International Samples Fair, the poultry snack bar (above) sold some 8,000 servings of barbecued chicken and turkey sandwiches in the first 7 days, while at right is first exhibit of tallow-based soap sponsored by National Renderers and Italian soap makers.

Brazil Faces the Prospect of Smaller Cotton Exports

By VERNON L. HARNESS
Cotton Division, FAS

Reduced exports of raw cotton appear likely for Brazil over the next several years, as the nation's growing textile industry steps up consumption of this fiber and Brazilian farmers switch over to more lucrative crops.

For many years, cotton has been a major earner of Brazil's foreign exchange; but the level of shipments has varied sharply from year to year. This has been particularly noticeable in the past two decades, when consumption has been moving generally higher and production has climbed irregularly upward. To assure adequate supplies of cotton for the domestic textile industry, the Brazilian Government authorizes exports only after determining that domestic requirements will be met.

Brazilian cotton competes with U.S. cotton in nearly all foreign import markets. In the 1964-65 season, three-fifths of Brazil's total shipments of just over a million bales moved to four destinations—West Germany, the Netherlands, Japan, and Hong Kong. Most remaining shipments were exported to the United Kingdom, Belgium, France, the USSR, and South Africa.

Cotton use rising

Predictions of a drop in exports are based in part on changes now taking place in the domestic textile industry. Despite such problems as troublesome inventories and credit shortages, the industry has expanded facilities and cotton consumption in recent years and plans further growth and improvement. Renovation of facilities, badly needed in most mills, is progressing rapidly.

Centered in the south and in São Paulo State in particular, the textile industry has access to a wide range of staple length and grades of fiber and is able to produce an extensive assortment of fabrics. Its annual domestic use of cotton has varied between 1,150,000 and 1,300,000 bales in recent years and could well go higher in view of the country's increasing population and the likelihood of a gradual rise in per capita income.

Future prospects will be even brighter for the industry if Brazil finds export markets for additional quantities of cotton textiles. Such exports, though only a small part of total use, have risen in recent years, going mainly to the United States and neighboring countries. However, a considerable improvement in the general level of efficiency appears necessary before Brazil can compete on a large scale in foreign textile markets.

Cotton production declining

Brazil has considerable potential for increased agricultural output during the next several years. However, cotton appears unlikely to share in this expansion as returns from it have become less attractive relative to other products, and even now, cotton acreage and production are declining. This season, for instance, cotton production dropped an estimated 2 million bales—only slightly below the 1964-65 level but 10 percent under average production in the past five seasons.

All of the fall-off has occurred in the southern cotton region, where the big producing States—São Paulo, Paraná, Minas Gerais—grow two-thirds of the nation's cotton on only half the total acreage. Here, cotton acreage for 1965-66 is reported to be 10 percent below the previous year's, and yields are lower than had been anticipated.

Reduced cotton prices in world markets have definitely influenced the outlook for lower production in the south, but a number of other factors are also important.

For one thing, cotton often plays a transitional role in coffee or coffee/cattle enterprises, and its production varies accordingly. This setup involves landowners' leasing land to individuals who agree to clear it as partial payment for a few year's use in cotton production. When the lease expires, much of this land is converted to pasture or coffee; in the latter case, cotton is often interplanted with coffee when frost damage makes it likely that tree yields will be reduced. After old coffee trees are uprooted, the land is returned to cotton, another annual crop, or pasture.

Another factor is the keen competition for land in the south—producer of much of Brazil's peanuts, corn, rice, potatoes, beans, sugarcane, and soybeans. Because of this region's suitability for so many crops, most persons managing cotton farms here are quite sensitive to changing profit relationships among competitive crops.

During the past two seasons, the profit advantage has swung from cotton to several alternative crops, especially peanuts and other oilseeds: Soybean acreage, though still extremely small, is expanding rapidly; and peanut prices held firm this season, despite larger production. In view of these facts, plus the outlook for lower cotton prices, the shift to other crops is expected to continue over the next few seasons.

Helping to buffer cotton's current disfavor among southern farmers is its suitability as a first crop on newly cleared land. This has resulted in a westward movement of cotton production as forest regions to the west are cleared. It is reflected in the drop in cotton acreage of São Paulo and Paraná and the rise in acreage of adjacent Mato Grosso.

North's major cash crop

In northeastern Brazil, where cotton is grown year-round rather than annually as in the south, production this season is about equal to that of 1964-65. Comprised mainly of Ceará, Paraíba, Rio Grande do Norte, Pernambuco, and Marahão, this region presents a somewhat different picture from southern Brazil.

Here, rainfall is heavy along the coast but diminishes to arid levels a relatively short distance inland. While cane and other crops can be grown in the coastal area, perennial cotton is about the only cash crop that can withstand the severe drought conditions of the interior.

Perennial, or "tree," cotton yields little, if any, fiber the first year but can produce a crop annually for two decades or longer. Generally, yields fall off sharply after about 6 years, at which time the plants are generally replaced, or cut to ground level.

Present conditions are such that cotton area and production in the northeast are likely to remain near present levels during the immediate years ahead.

India's Output of Jute Goods at Record Despite Raw Jute Shortage

The Indian jute industry, which operated under threats of raw material shortages during calendar 1965, nevertheless produced more jute goods than ever before.

Total production of jute goods in calendar 1965 is reported to have been 70,000 metric tons above 1964 output, reaching a new record of 1,420,000 tons. The total quantity of jute goods exported is estimated at 935,000 metric tons valued at $386.4 million, compared with 916,000 at $338.1 million in 1964. Jute goods continue as the country's largest single earner of foreign exchange.

Combined production of raw jute and mesta during the 1965-66 crop year (July-June) is estimated at 2.4 billion pounds, down 640 million pounds from the previous year's production and 800 million pounds short of the 3.2-billion-pound target. Almost all the decline came in output of raw jute, estimated to be off 25.5 percent to 1.794 billion pounds; mesta production is unofficially estimated at 600 million pounds, down 6.3 percent from last year.

Government authorizes imports

In an effort to relieve the raw jute shortage created by the short crop and the loss of imports from Pakistan because of the India-Pakistan conflict, the Government of India has authorized the import of some 400 million pounds of mesta from Thailand.

Target production for 1966-67 is projected at 3.6 billion pounds, comprising 2.88 billion pounds of jute and 720 million of mesta. The Indian Jute Development Council, which was created in 1965 as an advisory body, has recommended that this production target be achieved by an intensified cultivation program in 21 selected districts of the major jute-producing area. The plan is to increase yields per acre by double cropping, increased use of fertilizer, improved seeds, and wider use of irrigation.

Fiber consumption reduced

The index of wholesale prices for raw jute (base 1952-53) increased from 148 in July 1964 to 246 in December 1965; that for jute manufactures increased from 100 to 152 during the same period. In an effort to ease the cost-price squeeze, the Indian Jute Mills Association decided to reduce fiber consumption by member mills in the period March 1 to August 1, 1966, to 90 percent of their average monthly consumption in calendar 1965.

As a result of this step and the proposed importation of mesta from Thailand, the Indian jute industry may see its way through the current year. However, increased domestic production of raw jute, as envisaged by the Jute Development Council, is the only real solution to the continued problem of raw jute shortage.

Over the last 2 years, the United States has imported approximately 43.6 percent of India's exported hessian goods (burlap) and approximately 1.5 percent of its exported sacking goods.

Colombia's Cotton Crop Declines for Third Consecutive Season

Colombia's cotton crop for the 1965-66 season (August-July) is tentatively placed at 280,000 bales (480 lb. net)—compared with 300,000 bales in 1964-65 and average production of 335,000 bales in the past 5 seasons. This is the third consecutive season in which the cotton crop has been smaller than the preceding season's, and the current one is the smallest since 1959-60.

Total cotton acreage in Colombia now stands at about 410,000 acres, slightly above last season's but considerably less than the 1962-63 record of 449,000 acres.

The significant patterns of cotton area and production in Colombia in the past 3 or 4 years have been the decline in the once dominant Central Zone and the increase in the Coastal Zone to the north. This season's crop in the Central Zone, at 75,000 bales, was scarcely one-third the size of the 1962-63 crop. Reasons given for the decline in this region's production include shortages of credit, uncertainty of the level of the support price at planting time, and intense competition from other crops for available land.

Output rising in Northern Zone

In the Northern Zone, the 1965-66 cotton crop (now being harvested) is estimated at about 205,000 bales, 5 percent above the previous season's. Acreage was expanded by one-third, but lower yields—reduced by severe insect damage in many parts of the zone—offset most of the effects of larger area. In contrast with the Central Zone, cotton area in the Northern Zone has been climbing for several seasons, and this section now accounts for four-fifths of total cotton acreage. In the north, cotton has faced less intensive competition from other crops and, reportedly, production costs have risen less rapidly than in the Central Zone.

Some Colombian farmers have expressed considerable pessimism about the outlook for further expansion in cotton production. The general feeling among many cotton leaders seems to be that over the next several seasons cotton area will remain near the present total and that the shift of acreage to the north will continue. The industry leaders hope that yields can be increased to supply the additional fiber needed for the expanding domestic textile industry.

Consumption, demand increasing

Cotton consumption this season, estimated at 300,000 bales, is about 10 percent larger than a year ago. Mill capacity has increased during the past several years, reflecting the expansion of Colombia's textile export trade and an increased domestic demand for textile goods that is largely the result of rapid growth in the urban population and some increase in per capita income. Although cotton textile mills are located in 10 Colombian cities, three companies account for about 80 percent of total capacity.

Colombia is likely to continue needing imports of certain qualities of cotton not produced locally. A relatively low stocks position at the beginning of the current season, coupled with the smaller-than-expected crop, necessitated imports of a considerable quantity of cotton this season to maintain the growing rate of consumption. In 1964-65, Colombia imported 8,000 bales. In August-March of the current season, however, the United States exported 56,000 bales to Colombia, and relatively small quantities came also from Egypt, Mexico, and Peru.

Colombia exported 31,000 bales of cotton in the August-December period of the current season—mostly to West Germany, the United Kingdom, the Netherlands, Poland, and Belgium. Colombian exporters are finding it more difficult to export cotton since the recent change in the exchange rate for cotton. Early in the season cotton was exported at the free exchange rate of 20 pesos to 1 U.S. dollar; exports are decidedly less attractive at the present rate of 13.50 pesos to 1 U.S. dollar.

Syrian Cotton Crop Equals 1964-65 Record

The 1965-66 cotton crop in Syria is estimated at 810,000 bales (480 lb. net), the same as the previous season.

Area devoted to this season's crop is placed at 730,000 acres, 3 percent above planted area in 1964-65. Yields were affected this season by unfavorable weather at picking time and attacks by *Verticillium* wilt. About 80 percent of the area devoted to cotton is irrigated. All cotton production is supervised and controlled by the government through the Cotton Bureau, which determines the area to be planted by farmers in each district and specifies the varieties to be grown.

Syria consumed about 95,000 bales of cotton in 1964-65 and is expected to use an equal amount this season.

Cotton exports are Syria's leading earner of foreign exchange and tax revenue. Nearly 90 percent of the country's cotton has been exported in recent years. All exports are handled by the Cotton Marketing Organization. In August-February of the current marketing year, exports totaled 309,000 bales, 38 percent less than in the same period a year earlier. About 62 percent of exports during that period went to Communist countries, compared with 64 percent in the same months a year ago.

Cotton exports to principal destinations in the August-February period, in thousands of bales and with comparable 1964-65 figures in parentheses were USSR 75 (64), Mainland China 57 (147), France 27 (55), Romania 22 (27), Hungary 19 (25), Taiwan 17 (0), Japan 15 (4), West Germany 14 (29), Poland 13 (25), Italy 10 (24), and Netherlands 10 (13).

Indian Cashew Forecast Lowered

India's 1966 commercial cashew crop is now forecast at only 80,000 short tons—down 10,000 from an earlier figure and from last year's 90,000-ton crop.

As a result of the shorter Indian crop and smaller imports from East Africa, raw nut prices are at record levels. Recent quotations were $225.00 per short ton for Angoche raw nuts and $253.12 for Indian raw nuts, leading to a strengthening in the kernel market. Transactions are reported on April 29 at 78 cents per pounds, c.&f. New York prompt shipment (grade unspecified).

Netherlands Canned Fruit, Juice Prices

Selling prices in the Netherlands (landed, duty paid) of selected canned fruits and juices are as follows:

Type and quality	Size of can	Price per dozen units: April 1965	Jan. 1966	April 1966	Origin
CANNED FRUIT		*U.S. dol.*	*U.S. dol.*	*U.S. dol.*	
Apricots, halves:					
Choice	2½	—	3.65	3.48	Spain
Do	2½	—	3.71	3.55	Greece
Do	15 oz.	2.06	1.96	1.96	Spain
Standard in light syrup	2½	—	—	3.81	U.S.
Peaches, halves:					
Choice in heavy syrup	2½	4.01	—	4.14	U.S.
Do	2½	—	—	4.31	S. Africa
Do	303	—	—	2.88	U.S.
Do	16 oz.	—	2.55	2.55	Italy
Do	[1]500 gr.	—	—	2.61	Spain
Choice in light syrup	2½	3.85	4.38	3.91	U.S.
Do	303	—	—	2.75	U.S.
Standard in light syrup	2½	3.58	4.24	4.08	U.S.
In syrup[2]	2½	3.48	3.61	3.48	Greece
Peaches, other in light syrup:					
Standard:					
White medium	15 oz.	—	—	3.22	Japan
White quarters	10½ oz.	—	—	2.29	Japan
Sliced	2½	—	—	3.71	Australia
Irregular sliced[2]	2½	—	3.91	3.61	U.S.
Fruit cocktail:					
Choice in heavy syrup	2½	—	—	5.60	U.S.
Do	303	—	—	3.58	U.S.
Do	8 oz.	—	—	2.12	U.S.
Choice in light syrup	2½	4.64	5.64	5.44	U.S.
Do	303	—	—	3.48	U.S.
Do	8 oz.	1.92	2.19	2.09	U.S.
Fruit salad:					
Choice in heavy syrup	[1]500 gr.	—	—	2.98	Spain
Do	[3]250 gr.	—	—	1.66	Spain
In syrup[2]	15 oz.	—	2.95	2.85	Spain
Do	2½	—	5.60	5.17	Spain
Pineapple:					
Fancy in extra heavy syrup:					
10 whole slices	2	3.68	3.75	3.81	U.S.
8 whole slices	2½	4.87	—	5.14	U.S.
4 whole slices	1	1.72	1.86	1.86	U.S.
Choice in heavy syrup:					
10 whole slices	2	3.48	3.28	3.55	U.S.
Do	20 oz.	—	—	2.62	Malaya
8 whole slices	2½	4.71	—	4.91	U.S.
Do	12 oz.	—	—	1.82	Malaya
4 whole slices	1	1.57	1.72	1.66	U.S.
In heavy syrup:[2]					
Chunks	2½	—	—	3.85	U.S.
Pieces	30 oz.	—	—	3.45	Taiwan
Pieces	20 oz.	—	—	2.29	Taiwan
Mashed	10	—	—	9.45	Taiwan
Pears, halves:					
Choice in heavy syrup	2½	—	—	5.34	Italy
Cherries:					
Red sour, pitted, in water	10	13.59	16.24	15.75	U.S.
CANNED JUICE					
Orange, unsweetened	2	1.99	1.92	2.12	Israel
Grapefruit, unsweetened	2	—	—	2.15	Israel
Pineapple, unsweetened, fancy	2	2.15	2.15	1.72	U.S.

[1]500 grams = 17.6 oz. [2]Quality not specified. [3]250 grams = 8.8 oz.

London's Canned Fruit and Juice Prices

Selling prices in London (landed, duty paid) of selected canned fruits and juices are given in the following table:

Type and quality	Size of can	Price per dozen units: April 1965	Jan. 1966	April 1966	Origin
CANNED FRUIT					
Apricots:		*U.S. dol.*	*U.S. dol.*	*U.S. dol.*	
Whole, unpeeled, choice	303	2.33	2.36	2.40	U.S.
Halves:					
Fancy	2½	3.13	3.20	3.20	S. Africa
Choice	303	2.85	2.68	2.68	U.S.
Do	2½	4.16	4.02	4.02	U.S.
Do	2½	3.34	3.45	3.45	Australia
Do	2½	2.92	3.10	3.10	S. Africa
Do	1 (15 oz.)	1.71	1.84	1.84	S. Africa
In syrup	15 oz.	1.54	1.41	1.47	Spain
Standard	2½	3.59	3.43	3.43	U.S.
Peaches, Clingstone:					
Halves:					
Fancy	2½	3.31	3.38	3.38	S. Africa
Do	2½	3.41	3.55	3.55	Australia
Choice	2½	3.90	—	3.55	U.S.
Do	2½	3.04	3.27	3.27	S. Africa
Do	2½	3.34	3.45	3.45	Australia
Do	303	2.61	2.29	2.34	U.S.
Pears:					
Fancy	2½	3.52	3.55	3.55	S. Africa
Do	2½	3.55	3.66	3.66	Australia
Choice	2½	4.30	7.10	7.10	U.S.
Do	2½	3.26	3.45	3.45	S. Africa
Do	2½	3.34	3.59	3.59	Australia
Do	303	2.71	3.98	3.98	U.S.
Fruit cocktail:					
Choice	303	2.61	2.76	2.76	U.S.
Do	8 oz.	1.54	1.70	1.70	U.S.
Do	15 oz.	—	2.10	2.10	Spain
Do	2½	—	4.15	4.15	Australia
Grapefruit sections:					
Choice	303	—	[1]2.10	[1]2.10	U.S.
Quality not specified	2 (20 oz.)	2.62	2.73	2.73	Israel
Do	20 oz.	2.52	2.57	2.62	B.W.I.
Pineapple:					
Slices:					
Fancy	2½	—	3.91	3.91	U.S.
Do	2	3.73	2.94	2.94	U.S.
Do	16 oz.	1.78	1.92	1.89	S. Africa
Choice	2½	—	3.64	3.64	U.S.
Do	2½	3.50	—	3.29	Formosa
Do	2	3.55	2.73	2.73	U.S.
Round:					
Choice	20 oz.	3.18	—	2.31	Formosa
Standard	[2]16 oz.	1.81	1.73	1.72	Malaya
Spiral standard	[2]20 oz.	1.92	1.89	1.92	Malaya
CANNED JUICE					
Orange, unsweetened	43 oz.	4.55	4.34-4.55	4.44	Israel
Do	19 oz.	2.00	1.89-2.03	1.96	Israel
Do	46 oz.	[1]3.95	[1]3.50	[1]3.35	U.S.
Do	2	[1]1.92	[1]1.70	[1]1.45	U.S.
Grapefruit, unsweetened	19 oz.	1.94	1.87-1.94	1.92	Israel
Do	2	[1]1.27	[1]1.55	[1]1.50	U.S.
Do	46 oz.	[1]2.95	[1]3.60	[1]3.50	U.S.
Do	43 oz.	—	—	4.34	Israel

[1]F.o.b. Florida. [2]General average quality.

French Barley, Oats Acreage Up, Wheat Down

Good weather in France during March enabled farmers to catch up with planting of spring grains. April was generally cool with frequent rains, and fall-sown grains continue to appear good.

The area in wheat on April 1 was 11 percent below that of a year earlier, owing to the shortfall that excessive rain had caused in fall seedings. An estimated half of this unplanted acreage is expected to be sown to barley and a good portion to oats.

As of April 1, the area seeded to barley was 56 percent larger than a year earlier. Only about two-fifths of the crop remained to be sown on that date, indicating that seeding was being done earlier than last year. Total area in barley is expected to reach 6.7 million to 6.9 million acres or 400,000 to 750,000 larger than last year. Area in wheat is expected to be 10 million acres, down from 11.1 million last year.

As a result of the 25-percent cut expected in the sugar-beet crop, the area of corn for forage is expected to be increased in the northern and northeastern parts of the country to replace beet pulp for livestock feed.

Areas seeded to the main grain crops on April 1, according to the Ministry of Agriculture, were as follows:

	April 1, 1965	April 1, 1966
	1,000 acres	*1,000 acres*
Wheat	10,035	9,860
Barley	2,525	3,940
Rye	550	530
Oats	1,375	1,710

Trinidad Seeks Imports of U.S. Poultry Meat

Because of the current meat shortage, the Government of Trinidad and Tobago has issued permits for the import of 150,000 pounds of chicken backs and necks from the United States. Imports of fresh, chilled, or frozen meat had been banned since mid-November 1965, when stocks of frozen poultry and other meats were considered excessive.

The recent decline in locally produced poultry meat was due partly to a switch by many broiler producers, fearing a further decline in broiler prices, to production of eggs, which appeared to offer better market prospects. This change, plus the ban on imports, resulted in a run on locally produced poultry and an accelerated withdrawal of frozen meat from stocks. The carryover of frozen poultry at the end of 1965 amounted to 1 million pounds.

If the meat shortage continues, a further relaxation of poultry meat imports may be forthcoming. Imports of beef, traditionally supplied by New Zealand, require about 3 months from date of order to delivery. Frozen poultry can be booked and shipped from the United States and delivered to Trinidad within 3 weeks.

Canada Announces Further Dairy Supports

The Canadian Agricultural Products Board (APB) recently announced further dairy-product supports in conjunction with the 1966-67 dairy support program which became effective April 1, 1966 (see *Foreign Agriculture* April 18, 1966).

Spray process dry skim milk is being supported by an export subsidy of 2.78 cents per pound, with the APB purchasing this product at 16.65 cents per pound and reselling to the tenderer at 13.88. The subsidy applies on exports completed by December 15, 1966, to approved destinations in Europe, Africa, and the Western Hemisphere excluding the United States.

This support is part of the over-all plan to guarantee farmers $3.70 per hundredweight for manufacturing milk.

Although the government will make direct payments to milk producers of 69 cents per hundredweight, the $3.70 level will be a reality only if processors pay a minimum of $3.01 for manufacturing milk. Under the 1965-66 dairy program, which established prices to farmers at $3.24 per hundredweight, skim milk powder was supported by an export subsidy of 0.93-2.78 cents per pound at various times. The level of export assistance depended to a large extent upon Canada's competitive position in world markets, and the level of Canadian stocks.

A definite shift to shipping whole milk at the expense of cream has resulted in more solids being delivered to processing plants. Skim milk production, which was 176 million pounds in 1963, increased to 203 million in 1964 and 222 million last year. Production could reach 240 million pounds in 1966.

A product which competes with nonfat dry milk production in the utilization of raw milk is casein. An export subsidy of up to 12.03 cents per pound is currently being paid on dry casein and caseinates shipped to approved destinations, excluding the United States. The subsidy is applicable to all shipments leaving Canada on or before December 16, 1966. The current program authorizes the APB to purchase casein and caseinates from the tenderer at 41.63 cents per pound reselling this product at 29.60 cents per pound, the difference being the subsidy.

Casein production is encouraged by the Canadian Government to provide an alternative use for milk other than in nonfat dry milk. With 2.5 pounds of casein produced per 100 pounds of milk, compared with 8 pounds of nonfat, output of 23 million pounds of casein in 1965 possibly prevented a further 75 million pounds of nonfat powder from being offered on the Canadian market. Under the new support policy, nonfat production will return to the processor about $1.34 per 100 pounds of milk at 16.65 cents per pound, compared with a return of only $1.06 for casein when supported domestically at 41.63 cents a pound.

Suez Canal Shipments in March

Northbound shipments of oil-bearing materials through the Suez Canal in March totaled 149,011 metric tons—1,177 tons above the February volume but 10 percent below that of March, 1965. In October-March 1965-66, shipments of oil-bearing materials, at 794,988 tons, were 3 percent below the level of the corresponding period a year earlier. Reduced shipments of soybeans, peanuts, cottonseed, and flaxseed were largely offset by increased movements of copra.

NORTHBOUND SHIPMENTS OF OIL-BEARING MATERIALS THROUGH THE SUEZ CANAL

Item	March		October-March	
	1965	1966	1964-65	1965-66
	Metric tons	*Metric tons*	*Metric tons*	*Metric tons*
Soybeans[1]	46,054	16,058	120,572	56,425
Copra	65,728	84,111	412,424	486,952
Peanuts	25,669	17,884	101,207	87,100
Cottonseed	4,922	6,648	58,857	49,761
Flaxseed[2]	3,924	1,990	14,567	3,586
Castorbeans	1,166	8,670	17,344	25,387
Palm kernels	2,208	3,886	14,798	17,499
Sesame	5,984	5,600	19,346	30,265
Other	10,630	5,164	58,601	38,013
Total	166,285	149,011	817,716	794,988

[1]Metric ton of soybeans equals 36.7 bu. [2]Metric ton of flaxseed equals 39.4 bu.
Suez Canal Authority, Cairo, Egypt.

Soybean shipments from Mainland China in March rose slightly from February's low level to about 0.6 million bushels. However, shipments through the first half of the year beginning October 1, 1965, were only 2.1 million bushels against 4.4 million in October-March 1964-65.

NORTHBOUND SHIPMENTS OF SOYBEANS THROUGH THE SUEZ CANAL

Item	Year beginning October 1				
	1961	1962	1963	1964	1965
	1,000 bu.	*1,000 bu.*	*1,000 bu.*	*1,000 bu.*	*1,000 bu.*
January	2,907	622	661	212	1,058
February	548	451	590	923	315
March	627	255	233	1,692	590
October-December	919	12	19	1,604	110
January-March	4,082	1,328	1,484	2,826	1,963
April-June	239	573	706	1,376	—
July-September	327	1,584	4,106	—	—
October-September	5,567	3,498	6,315	7,368	—

Totals computed from unrounded numbers.
Suez Canal Authority, Cairo, Egypt.

Aggregate shipments of vegetable oils in October-March 1965-66 amounted to 236,805 tons against 193,113 tons in the same period of 1964-65. This included 41,015 tons in March—12,719 tons below February shipments. The gain reflected increased movements of cottonseed and palm oils although movements of coconut, castor, and tung oils declined.

Shipments of vegetable cakes and meals during the October-March period of 1965-66 totaled 838,793 tons against 845,765 tons in the corresponding months of 1964-65. The decline was due to reduced movements of peanut meal not quite offset by increased shipments of copra and cottonseed meals.

Canadian Rapeseed Output To Continue Large

Canada's rapeseed crop in 1966 is unofficially forecast at about 550,000 short tons, which is 4 percent below the record 1965 crop of 570,000 tons, but nearly three times average annual production during the 1956-60 period. This forecast is based on the official planting intentions of March 1, 1966 (1,368,000 acres) and an average yield of 16 bushels (800 pounds) per acre. The record 1965 crop was produced on 1,435,000 acres with an average yield of 15.9 bushels (794 pounds) per acre.

Exports for the crop year beginning August 1, 1965 are estimated at 350,000 tons—50 percent above the volume exported in the previous crop year. Rapeseed oil exports, as in the past, continue insignificant.

Exports of rapeseed from Canada—the world's major exporter—in calendar year 1965 increased to a record 266,213 short tons, nearly three times greater than in 1964 and one-fourth above the previous record of 214,817 tons exported in 1962. Japan continued to be the major market, accounting for 43 percent of the total. Exports to Europe accounted for most of the remainder. In 1965 new markets were established in Czechoslovakia, Poland and Pakistan while movements to the United States, Taiwan, and India declined.

Canadian rapeseed prices held much firmer than anticipated in view of the sharp increase in production. This can be partly attributed to the delivery quotas set by the Wheat Board, which restricted deliveries of rapeseed at country points. Thus, there was no visible surplus in de-

liverable positions, and some shortages actually developed in filling contracts. These resulted in wide price fluctuations.

Rapeseed prices in Vancouver averaged Can$2.32 per bushel in August, reached Can$2.95 in January, and in April were about Can$2.60. The average farm price for rapeseed in Manitoba is presently estimated at Can$2.50 per bushel.

A relatively new type of Polish rapeseed, "Echo," has been grown successfully in the Nipawn area of Saskatchewan. This variety has been licensed and is available for commercial distribution. It reportedly offers some advantages in increased seed yield. However, the "Tanka" variety of rapeseed, which was widely used in 1962-65, is still claimed by agronomists to be the best variety for southern Manitoba. Some frost damage resulted from use of this high-yielding variety in areas too far north.

CANADA'S SUPPLY AND DISTRIBUTION OF RAPESEED[1]

Item	Average 1956-60	1963	1964	1965[2]	1966[2]
	1,000 short tons	*1,000 short tons*	*1,000 short tons*	*1,000 short tons*	*1,000 short tons*
Supply:					
Stocks, Aug. 1	8.0	15.0	22.0	29.2	149.2
Production	185.5	209.0	330.8	570.0	[3]547.2
Total supply	193.5	224.0	352.8	599.2	696.4
Distribution:					
Exports:					
Seed	134.0	130.3	230.9	350.0	—
Oil (seed basis)	2.5	.6	1.0		—
Apparent domestic consumption	44.5	71.1	91.7	100.0	—
Stocks, July 31	12.5	22.0	29.2	149.2	—
Total distribution	193.5	224.0	352.8	599.2	—

[1]Marketing years beginning August 1. [2]Preliminary and partly estimated. [3]Unofficial forecast based on March 1 planting intentions of 1,368,000 acres and an average yield of 16.0 bushels per acre.

Compiled from DBS Trade of Canada and other sources.

CANADIAN RAPESEED EXPORTS

Country of destination	1961	1962	1963	1964[1]	1965[1]
	Short tons	*Short tons*	*Short tons*	*Short tons*	*Short tons*
United States	247	702	381	3,133	119
Belgium-Luxembourg	6,398	2,783	—	—	1,696
Finland	—	—	—	2,245	—
France	11,438	8,550	—	—	—
Germany, West	13,916	14,783	241	232	22,646
Italy	38,263	90,407	19,223	3,265	48,126
Netherlands	18,342	31,284	2,772	9,341	22,429
Spain	—	—	—	1,003	152
United Kingdom	2,828	1,775	1,820	2,296	8,922
Czechoslovakia	—	—	—	—	15,184
Poland	—	—	—	—	9,921
Algeria	23,866	12,225	13,888	—	—
Japan	20,216	52,308	114,738	62,491	114,556
China, Taiwan	—	—	2,204	4,235	—
India	—	—	—	2,800	—
Pakistan	—	—	—	—	22,462
Total	135,514	214,817	155,267	91,041	266,213

[1]Preliminary.

Compiled from official and other sources.

West German Cigarette Output Rises

Cigarette output in West Germany (including West Berlin) last year totaled a record 102.1 billion pieces, 8.2 percent above the 94.4 billion produced in 1964. Production of cigars, however, dropped to 3,941 million pieces from 4,076 million in 1964. Also, the combined output of other products, at 19.2 million pounds, was 7.3 percent below the 20.7 million produced the previous year.

Cigarette sales during 1965 totaled 96.1 billion pieces—up 6.5 percent from 90.2 billion in 1964. Cigar sales dropped to 3,953 million pieces from 4,096 million, and sales of cut tobacco and pipe tobaccos were down 9.4 and 15.2 percent, respectively.

Sales of filter-tipped cigarettes continued to rise, accounting for 81.6 percent of the total last year, compared with 80 percent in 1964 and 77.9 percent in 1963.

Danish Cigarette Production Increases

Denmark's output of cigarettes rose from 5,931 million pieces in 1964 to 6,250 million in 1965—a gain of over 5 percent. Output of cigars, cheroots, and cigarillos also rose from the 1964 total of 1,200 million pieces to 1,254 million last year. Output of other products, however, declined.

Cigarette sales also were larger in 1965 than in 1964. In view of greater purchasing power, the outlook is for continued increases in cigarette consumption in 1966. As in recent years, exports—mainly to Norway, Sweden, and Austria—were substantial, amounting to about 700 million pieces.

Sales of filter-tipped cigarettes accounted for 39 percent of total cigarette consumption in 1965, compared with 38 percent in 1964 and 35 percent in 1963.

Turkish Tobacco Grower Prices Up

Grower prices for Turkey's 1965 crop of oriental types of tobacco produced in the Aegean region reportedly averaged about 42 U.S. cents per pound or almost 20 percent above the average price of 35.2 cents for the 1964 crop. The average grower price for the 1963 crop was equivalent to 47.1 U.S. cents and that for the 1962 crop, to 56.5 cents.

The 1965 Aegean tobacco growers' market in Turkey opened on January 17, 1966—6 weeks earlier than in the previous year. Sales for the Aegean region reportedly approximated 187 million pounds, slightly above the earlier forecast of 182.4 million.

Nigeria's Cigarette Output Still Rising

Cigarette output in Nigeria continues upward. Production during fiscal 1965-66 (April-March) was reportedly estimated at 4.8 billion pieces—up 9.1 percent from the 4.4 billion produced in the previous fiscal year. Output for fiscal 1966-67 is forecast at 5.3 billion pieces, or an increase of 10.4 percent.

Australia Expects Larger Tobacco Harvest

The 1966 tobacco crop in Australia is forecast at 26 million pounds from 25,000 acres, compared with the previous season's sales of 23.8 million from 25,755 acres. The 1965 harvest was slightly below the marketing quota of 26 million pounds because of adverse growing conditions.

Average grower prices for the 1965 crop were equivalent to US$1.13 per pound—slightly under the stabilization

plan's minimum average price of US$1.17. Following the close of the 1965 sales season, the Australian Tobacco Board reviewed the grade and minimum price schedule. This review resulted in an increase in the minimum average price for the 1966 crop to $1.23 per pound. Early-season sales of the current crop reportedly have averaged about US$1.30 per pound.

French Tobacco Imports Steady

French imports of unmanufactured tobacco in 1965 totaled 108.8 million pounds—slightly above the 108.0 million imported in 1964.

Major sources of imports last year, in order of importance and million pounds, were Argentina 21.7, Brazil 15.6, Bulgaria 8.3, Greece 8.3, Paraguay 7.8, Malagasy Republic 7.0, and the United States 6.0.

Average prices per pound paid to principal suppliers in terms of U.S. cents, were Argentina 18.4 cents, Brazil 20.2, Bulgaria 44.8, Greece 50.8, and Paraguay 17.5.

FRENCH IMPORTS OF UNMANUFACTURED TOBACCO

Origin	1963	1964	1965[1]
	1,000 pounds	*1,000 pounds*	*1,000 pounds*
Argentina	17,421	15,132	21,684
Brazil	10,882	15,372	15,642
Bulgaria	15,598	8,966	8,333
Greece	979	6,777	8,287
Paraguay	5,181	5,075	7,844
Malagasy Republic	8,117	7,685	6,986
United States	5,492	5,706	5,992
Cuba	1,799	4,211	5,710
Philippines	6,418	5,071	4,735
Rhodesia-Zambia-Malawi	4,694	3,772	4,665
Hungary	1,263	3,505	4,414
Yugoslavia	1,451	1,539	2,681
Romania	813	456	1,775
Mexico	3,366	988	1,744
Poland	2,361	2,619	1,473
Turkey	1,825	4	1,071
Central African Republic	941	886	1,034
Cameroon	1,023	739	858
Albania	450	2,425	551
Dominican Republic	1,713	5,922	141
Colombia	5,580	2,019	57
Algeria	721	5,542	—
Others	6,379	3,590	3,100
Total	104,467	108,001	108,777

[1]Preliminary.

Greeks Smoke More Cigarettes

Greek smokers purchased a record 31.2 million pounds of cigarettes in 1965—up nearly 5 percent from 29.8 million in 1964.

The three most popular brands in Greece are Extra, Semi-Luxury, and Luxury. Together these brands represented 67 percent of total sales last year.

Filter-tipped cigarettes accounted for 20.6 percent of total sales in 1965, compared with 15.2 percent in 1964 and 9.4 percent in 1963. Filter-tips are made only in the Semi-Luxury, Luxury, and Super-Luxury brands. These retail for the equivalent of 28.3, 33.0, and 40.0 U.S. cents, respectively, per pack of 20.

Ireland's Tobacco Imports Down

Ireland's imports of unmanufactured tobacco in 1965 totaled 11.7 million pounds, of which the United States supplied about 9.8 million, or 84 percent. In 1964, imports were 14 million pounds and the U.S. share, 89 percent.

Purchases from Rhodesia rose from 707,000 pounds in 1964 to nearly 1 million last year. Other suppliers in 1965 included Malawi 335,000 pounds, Canada 251,000, Republic of South Africa 228,000, and India 111,000.

Irish factories used about 13 million pounds of tobacco last year, mainly for larger output of cigarettes. The increase in cigarette manufacture was for export, particularly to Kuwait and Malaysia. Irish cigarette exports jumped from 362,000 pounds in 1964 to 918,000 in 1965.

Norwegian Tobacco Imports Smaller

Norway's imports of tobacco in 1965 totaled 9.4 million pounds—down 18 percent from the 11.4 million purchased in 1964.

U.S. leaf accounted for 6.0 million pounds or 64 percent of the total, compared with 68 percent in 1964. Imports from Rhodesia-Zambia-Malawi totaled 1.9 million in 1965, against only 1.4 million in 1964. Other major suppliers last year were Canada, Greece, and Turkey.

Average import prices per pound for tobacco from principal sources in 1965, in terms of U.S. cents, were the United States 78, Rhodesia-Zambia-Malawi 44, Canada 69, and Greece 74.

NORWAY'S TOBACCO IMPORTS

Origin	1963	1964	1965
	1,000 pounds	*1,000 pounds*	*1,000 pounds*
United States	8,283	7,752	5,952
Rhodesia-Zambia-Malawi	1,969	1,394	1,905
Canada	545	467	395
Greece	344	327	247
Turkey	507	405	161
Thailand	344	234	104
Japan	639	450	(1)
Others	233	322	599
Total	12,864	11,351	9,363

[1]If any, included in others.

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Highlights of the Agriculture and Trade of the United Kingdom

Resources.—The United Kingdom of Great Britain (England, Wales, and Scotland) and Northern Ireland covers an area of 94,200 square miles, slightly less than the area of Oregon, and in June 1965, had a population of 54.4 million, of which about 42 percent or more than 23 million were in the civilian labor force. In 1965, the gross national product (GNP) was about $86.3 billion or about $1,585 per capita.

Agriculture.—The index of Net Agricultural Output for 1965-66 is forecast to be about 2 points above the 137 realized in 1964-65 (1954-55/1956-57=100). This is the latest increase in a strong upward trend apparent during the past decade. The gross product of agriculture, forestry, and fishing was nearly $2.9 billion in 1964, about 3.5 percent of GNP. Agriculture employs less than 4 percent of the civilian labor force. With about 450,000 farm holdings and 220,000 full-time farm operations, as few as 42,000 large commercial farm enterprises account for about half of total agricultural output. Livestock products contribute about two-thirds of the value of agricultural production; milk alone earns over 22 percent of total cash receipts. More than 75 percent of the arable land is devoted to grain and about 70 percent of the total agricultural area is utilized for the production of livestock feed.

Food Situation.—Caloric intake averages about 3,300 per capita per day. About one-half of the food consumed in the United Kingdom is derived directly or indirectly from imported agricultural products. The diet of the people in the United Kingdom has been improving since World War II. The demand for livestock products, particularly meat, has been strong. At the same time, consumption of staple food products—such as cereal products and potatoes—has declined. However, consumption of sugar has continued to increase.

Foreign Trade.—The United Kingdom had a very unfavorable trade balance in 1964. Exports totaled $11.9 billion in 1964 while total imports equaled $15.4 billion. The United Kingdom is the world's leading importer of agricultural products. These products have accounted for about two-fifths of its total imports in recent years. The leading agricultural imports in 1964 were meat and meat preparations, fruits and vegetables, cereals and cereal preparations, natural fibers, dairy products, eggs, sugar, tea and spices, and tobacco. About half of the agricultural imports in value terms come from the Commonwealth nations, chiefly Australia, New Zealand, and Canada. The United States ranks first among non-Commonwealth suppliers; EFTA countries supplied about 11 percent, most of which were of Danish origin. Exports of agricultural products account for about 5 percent of total exports.

Agricultural Trade With the U.S.—The United States supplied about 8 percent ($511 million) of the agricultural products imported by the United Kingdom in 1964 and took 8 percent ($52 million) of the United Kingdom's agricultural exports. Major agricultural imports from the United States are corn, tobacco, cotton, and fruits and vegetables. Agricultural exports to the United States of importance include wool and confectionery items.

Factors Affecting Agricultural Trade With the U.S.—The United Kingdom's trade policy has been protective of Commonwealth and Irish as well as domestic agriculture within the context of a low-price food policy under which the United Kingdom has historically been a relatively open market for food products in return for industrial export markets. Under the National Economic Development Plan adopted in September 1965, agriculture, now one of the most efficient industries, has been asked to supply most of the added food and feed requirements as these expand to 1970.

It seems likely that the net effect of current policy will be the stimulation of red-meat production, accompanied by increased milk production, and a continuation of the increase in grain production, particularly barley. As a result it is likely that the production of these products will increase faster than consumption. If this does occur, overseas suppliers may not be able to maintain their historical share of the market. For reasons of animal and plant health there are a limited number of prohibitions on imports of agricultural produce from certain countries. The most important of these bans affect fresh and frozen poultry from North America.

This is the second article in the series of country profiles that Foreign Agriculture *introduced in its May 9, 1966 issue. Similar articles on other countries important to U.S. trade will appear each week throughout the year.*